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Professor James has no 'fear-thought,' and surely we all hope that he will continue to open up a new vein of thought every little while.

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La mémoire des rêves et la mémoire dans les rêves. N. VASCHIDE and R. MEUNIER. *Revue de Philosophie,* October and December, 1906. Pp. 359–372; 626–650.

In these interesting articles the authors propose to compare the results of their own findings in an experimental study of memory of dreams and memory in dreams with the conclusions reached by preceding writers. They seem to think that all previous students of the subject have carried on their study in a casual and occasional way. Their citations from previous writers include only French authors. There is no reference to dream literature in other languages, except passing allusions to Maudsley and de Sanctis. Here is the list of authors whose writings our investigators deem worthy of attention: Hervey de Saint-Denis (1867), Maury (1878), Max Simon (1888), Tissié (1890), Goblot (*Revue Philosophique,* 1896), Tannery (*ibid.,* 1898), Egger (*ibid.,* XLVI.), Dugas (*ibid.,* 1897), Beaunis (*American Journal of Psychology,* 1903), Vaschide on 'Mourly Vold' (*Revue de Psychiatrie,* 1904), Rousseau (*Revue Philosophique,* 1903), Duprat (*Revue de Psychiatrie,* 1905). The authors state that their experiments and conclusions were communicated to the Société de Psychologie de Paris in June, 1906.

According to our authors, Saint-Denis trained himself to remember his dreams. They agree with him that this effort did not superinduce more frequent dreaming, but increased the ability to remember dreams. Last night of failure to remember dreams, says Saint-Denis, was the 179th. For the first six weeks he found some trouble, but later on he could recall a dream after several days had passed. He concludes, as a result of his experience, that 'no sleep without dreams' is an axiom of dream psychology. He had himself waked during thirty-four consecutive nights, and always caught himself dreaming. He does not state how he was waked. Our authors make much of the mode of waking the subject, but they do not raise the question in this place. Saint-Denis experimented on a friend. Woke him from a deep sleep (method not mentioned) and asked him about his dreams. The friend at first denied having dreamed, but after the cue 'soldier' was given him, he remembered the dream which had been excited by the experimenter's words of military command given during the subject's sleep. On the strength of this experiment and his own experience, Saint-Denis forthwith concludes that all people dream as he and his friend do! The experiments, of course, do not prove that there is *always* dreaming going on during sleep. The experiments of our authors, to be mentioned later, seem to them to corroborate the 'no sleep without dreams' theory. Saint-Denis acquired the power of recalling dreams in his dreams. He seems to think that there are various 'dream negatives' (*clichés*

souvenirs) that get reproduced over and over again; that memory, therefore, plays a predominant rôle in dreams. *Nihil est in visionibus somnorum quod non prius fuerit in visu,* is his dictum as to dream images. He thinks memory is exalted in dreams, especially in dialogue forms, an illustration of which he gives. The present writer has noticed the same apparent exaltation of memory in normal conditions of waking reminiscence (especially memories of childhood), as well as in recall of long-forgotten and minute memories during emotional stress.

Our authors pronounce Maury's studies on dream life 'classical.' These certainly agree pretty well with their own conclusions. They quote a dream of Maury's which looks very much like a real dream *in* a dream. In his dream he seemed to remember the scene as one he had witnessed recently when he had visited the 'same place' with his brother. There was nothing true in the dream, and the brother had been dead ten years.

Max Simon's book is pronounced interesting, but popular. Out of his collection are singled out the well-known stories from Macario and Coleridge. According to Max Simon, dreams often have a profound influence on every-day life. Vaschide and Meunier make the suggestive remark that young women sometimes intoxicate themselves with day dreams about their night dreams! Simon, like the other writers mentioned in these articles, is credited with the belief that there is paramnesia and hypermnesia in dreams. But, let us note, memory is notoriously unreliable in normal life; and hypermnesia is of frequent occurrence under emotional stress as well as through accidental cues furnished by daily life.

From Tissié's experience our authors quote two very suggestive cases. In one, the subject has a dream wherein he passes an esthetic judgment of *bourgeoise.* This dream is recalled to his mind when he sees next day a young man embracing his sweetheart in a public place. In the second case, the subject finds himself during waking hours suddenly and automatically saluting a casual business acquaintance whom he would not ordinarily have spoken to. No sooner was this act performed than he recalled a dream of a night or two before in which he had figured as amicably associating with this same comparative stranger. This case seems to show clearly the influence of the dream life on waking moments of 'abstraction,' wherein subconscious results can easily occur.

In opposition to the contentions of Le Lorrain and Egger (p. 371), Clavière is cited as reporting what appears to be a disproof of the claim that dreaming is more rapid than normal mental action. Clavière has one of those impertinent and persevering alarm-clocks that rob one of all excuse for oversleeping himself. He was dreaming in quite dramatic fashion when his clock gave its first warning. He woke up enough to note the exact phase of his dream and then went on dreaming. When the second ringing started up, Clavière woke to clear consciousness and noted the time. Knowing the interval between the two alarms he could easily calculate how long his dream between strokes had taken. He

found that the interval was almost exactly what would have been occupied by a real dramatic performance. That the dramatic unities were preserved in this particular and unusual case does not give us the right to draw conclusions as to the rapidity of dreams in general. It is more than likely, however, that dreaming can not outstrip day dreaming, castles-in-Spain and the like. It may well be true that elaborately detailed action, whether in dreams of the night or fancies of the day, will take up time not greatly different in amount from that taken by real action.

Goblot holds that all dreaming occurs during the transition from sound sleep to waking. Sudden awakening may even bring 'continuity' between the two states. Their images get mixed or even work together. "No dreams in sleep; always dreams as we are awaking" (p. 627). Our authors are inclined to admit this of the *memory* of dreams in untrained or 'unaided' dreamers, but otherwise hold that dreams occur during deep sleep. They fail to see why the mixing of dream images with waking images, on some occasions, should invalidate the general reliance to be placed on the memory of dreams, especially under experimental conditions.

Tannery holds that all dreams are connected with anterior, but forgotten, dreams. Egger criticizes this opinion, but as Tannery's test cases are not given, the sharpness of the discussion's point is somewhat blunted. However, Egger gives a case which he thinks would be a test case for Tannery, but which he explains on different principles. Egger has a dream about an operating room, and it seems to point back to a previous dream. But he explains the initiation of it as due to a peripheral disturbance quite sufficient to account for it, and thinks that the apparent reference to a previous and forgotten dream can easily be accounted for by previous experience (p. 628 f).

Dugas shows a commendable tendency in declining to separate dreaming and waking too sharply. According to MM. Vaschide and Meunier, he makes the following points: Dreaming and waking become confounded at the point when one believes himself awake when he really is not fully awake (p. 629). Dream images have no essential differentia. Half-sleep (dozing) unites dreaming and waking. They are confounded when one is suddenly awakened. The type of somnolence is 'waking broken by slumbering or sleep interrupted by dreams.' Awaking is a displacement of the field of attention (p. 631). We distinguish dreams from waking states by the superior automatism of the former. Physiological automatism corresponds to profound sleep without consciousness, and psychological automatism to the dreaming phase. The unconscious cerebration of waking hours becomes automatic and is continued as such in dreams. Beaunis (*American Journal of Psychology,* 1903) criticizes Goblet, Egger and Dugas. He holds that by leaving out doubtful cases, we can easily distinguish dreams from retrospection of the waking type. But the root of the question seems to be, By what sign do we recognize 'doubtful cases'? Good observers sometimes express considerable hesita-

tion in deciding whether a certain memory had its origin in dreams or in ordinary retrospection. And their hesitation is due simply to their failure to place the recalled circumstance. They have no feeling to guide them, and the mental data fit well into either phase of mental life. Such cases are not subjectively 'doubtful,' but are objectively anomalous.

Beaunis holds that there are three phases of dreaming: (1) excitation, (2) memory, (3) irradiation. The brain side of these 'phases' is, of course, not known.

Passing by various interesting statements from Beaunis, such as the strong influence of vocation on the content of dreams, it would seem well to sound a critical warning in regard to two statements made by MM. Vaschide and Meunier in connection with their study of his views. Two highly doubtful conclusions are regarded by our authors as 'proved.' The first of these affirms, on the authority of Mourly Vold, that the dream experience of flying is due to 'genital influences.' It would take a very wide induction to persuade a careful man of science to accept this conclusion. Indeed, not a few young men who have dreams of an erotic nature dream about flying in contexts very far removed from the sexual atmosphere. Nor is it safe to intimate, as our authors do, that older men never dream that they are flying.

The second highly doubtful assertion made by our authors, this time on the authority of de Sanctis, is that we never dream about loved ones who have died recently. Exceptions to this 'induction' are numerous. A few weeks ago a certain lady of my acquaintance died. A few days afterward her husband dreamed that he was climbing a ladder to heaven and that he had just reached the top and was almost ready to faint with fatigue when hands were stretched out to him, seized upon him and pulled him in. The husband believed the hands were those of his wife. When this dream was spontaneously told me, I casually said to my informant, the deceased lady's sister, "Some say we never dream about the recently dead." She responded earnestly and warmly: "That isn't true, for I have dreamed all night about my sister, night after night, ever since she died."

We now come to the experimental part of the study. M. Vaschide had suggested at one time to M. Rousseau, and at another to M. Duprat, that they should experiment with suitable subjects in order to find out whether or no there was sleep without dreams. M. Rousseau tried only one subject, a young 'neuropath' aged twenty-five. This young man showed alternations between deep sleep and dreaming. His second dream period seemed to connect with his first to some extent, and the feeling of *déja vu* occurred in the second period of dreaming.

M. Duprat tried his hand on two children, one thirteen years old and the other ten. He found three stages: deep sleep, dreams, light sleep. These children's dreams show *la logique et la continuité.* Duprat thinks that memory was the chief agent in the dreams, and that the material was drawn from the experience of the day before. The dreams, vividly remembered in detail at first, get 'intellectualized' and schematized after-

wards in recall, and then are forgotten altogether. This is not unlike normal waking experience. The imaginative features drop out first, leaving the 'intellectual framework.' Duprat sums up his conclusions as follows: "The rhythm of mental life in the child seems to follow exactly the rhythm of the physiological life itself."

Before detailing their own experiments our authors sum up what they believe to be the chief results of their scrutiny of the 'casual and anecdotal' writings of others: (1) Hypermnesia and paramnesia are characteristic; (2) dreams most commonly remembered are those of the morning, of waking time and of light slumbering; (3) dream memories are frequently confused with those of the evening before. On the whole, our authors seem to accept these conclusions, though urging (*contra* Goblot) that dreams are not typically phenomena of 'transition,' and that instead of continuity between dreaming and waking we have 'oscillations between states of attention and distraction.' They believe that the *position* of the dream in the mental life is of fundamental importance, and to determine this their efforts are bent. For, they say, it is not enough to analyze dreams, as the current method does, but it is also necessary to study the individual when he is in deep sleep, and by a proper method of waking him and questioning him, find out whether he has been dreaming and what his dreams are. They think that their experiments show that there is no sleep without dreams. Let us turn to the experiments. The subject, a psychologist, was sharply awakened, after being regaled in his sleep by a slight musical repast furnished by a gramophone, whose virulence had been somewhat toned down by the blanketing of its trumpet. For four minutes the subject asseverated, "I dreamed not"; but the sly experimenters casually remarked on the beatific expression of his countenance just before waking. Said they, "You looked as though you heard beautiful music." Then the subject looked surprised, and thought it queer that he *did* remember a bizarre connection of images, with a vague background of disconnected images of various orders of sense. "They form cycles in my thought, but in each cycle there is music. . . . Sort of parallel dreaming." Sounds are the *Leitmotiv*. Our experimenters remark, *à propos* of method, that the subject should not be waked by calling. Speech is too full of suggestion. If the experimental conditions are well looked after, we shall find, say they, that the dreams of deep sleep have clear images unconnected with the waking state, but that the images of light sleep get mixed with those of the awakening. In their judgment, 'previous authorities' have really reported half-dreams, intermediate states, where there has been an 'oscillation' between images of sleep and those of waking.

They go on to conclude that dreams and images get together by 'mediate association,' without remembrance of the middle term. There seems to be a sort of 'emotive affinity' between the *Leitmotiv* of a dream and some of the images passing in the stream of dream consciousness. This is well shown, in the experiments, when the subject gives the dominant note of his dream in his first words after being awakened; other images seem simply to clear up the principal image. Our authors

seem to think this psychical mechanism *sui generis*—a 'very particular form of mediate association.' They are inclined to think that there is some analogy with certain forms of aphasia described by Vaschide and others. Here is the conclusion of this matter, according to MM. Vaschide and Meunier: All dreams are characterized by *cette mise en relief spontané des éléments substantiels du rêve* (p. 648).

According to these investigators, nightmare is to be classed with experimental waking. They seem to think that there is little variation in nightmare themes. As a final topic in their report, MM. Vaschide and Meunier discuss briefly the memory of a dream *in* a dream. They take this phenomenon to be one of simple auto-suggestion, and declare that it is 'never' found in experimental cases or in nightmare. Without making a point about explaining a complex phenomenon by one still harder to explain, we are certainly justified in doubting our authors' right to decide what may or may not take place in nightmare.

These suggestive studies indicate what is becoming clearer and clearer as the years go by, *viz.*, that we may expect to find many of the explanatory principles of hypnosis, hysteria, multiple personality and various other neuroses and psychoses by means of close observational and experimental studies of sleep and dreams. And our authors seem to be right in thinking that one of the main points to be studied is 'the memory *of* dreams and memory *in* dreams.'

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The Province of Functional Psychology. JAMES ROWLAND ANGELL. *The Psychological Review,* March, 1907. Pp. 61–91.

In a characteristically lucid manner Professor Angell sets forth three aspects of the psychology known as functional. The three view-points set forth are really, as the author shows, but three aspects of a common tendency in psychological treatment. The old and in part still new structural psychologists took the moment of consciousness as an isolated totality and proceeded to dissect it in the manner of the scientist dealing with a rock or an animal. Of note in this tendency are Wundt and Külpe. If, however, we look into other fields of science we find that where consciousness is concerned, as in the study of biology and physiology, an attempt is made to consider it as a factor in use and efficiency. A similar tendency is found nowadays in psychology, but there is as yet no decidedly harmonious treatment in this connection. Professor Angell neatly gives the three methods of treatment which are styled functional. As he says: "We have to consider (1) functionalism conceived as the psychology of mental operations in contrast to the psychology of mental elements; or, expressed otherwise, the psychology of the *how* and *why* of consciousness as distinguished from the psychology of the *what* of consciousness. We have (2) the functionalism which deals with the problem of mind conceived as primarily engaged in mediating between the environment and the needs of the organism. This is the psychology of the fundamental utilities of consciousness; (3) and lastly we have functionalism described